- **Informal ACA.** Informal ACAs can be designed by using separation plans and are established by the maneuver commander. Aircraft and surface fires may be separated by distance (lateral, altitude, or a combination of lateral and altitude) or by time. Distance separation requires less detailed coordination between aircraft and firing units, but can be the most restrictive for aircraft routing. Fire support personnel should select the separation technique that requires the least coordination without adversely affecting the aircrew's ability to safely complete the mission.

- **Lateral Separation.** (See figure 3-6, page 3-36.) Lateral separation is effective for coordinating fires against targets that are adequately separated from flight routes and ensures that aircraft are protected from the effects of friendly fires. This is an appropriate technique when CAS aircraft and ground firing units engage separate targets; the CAS aircraft will not cross gun-target lines. Lateral distances are based on the probable errors associated with the particular delivery system. Generally, the distances of 600 meters for artillery, 750 meters for naval gunfire less than or equal to 6 inch, and 1000 meters for naval gunfire greater than 6 inch are used for lateral separation. Terminal controllers must know the gun-target line so they can restrict aircraft from crossing trajectories. (For example, the terminal controller description of the ACA could be, "Stay west of grid line 62" or "Remain west of the river.")

- **Altitude Separation.** Altitude separation is effective for coordinating fires when aircraft will remain above indirect fire trajectories and their effects. (See figure 3-7 on page 3-37.) This technique is effective when aircraft and firing units engage the same or nearby targets. (For example, "Remain above 3000 feet mean sea level (MSL) in the quadrant northwest of grid 7325" or "Orbit above 5000 feet mean sea level at Possum Kingdom Lake.")

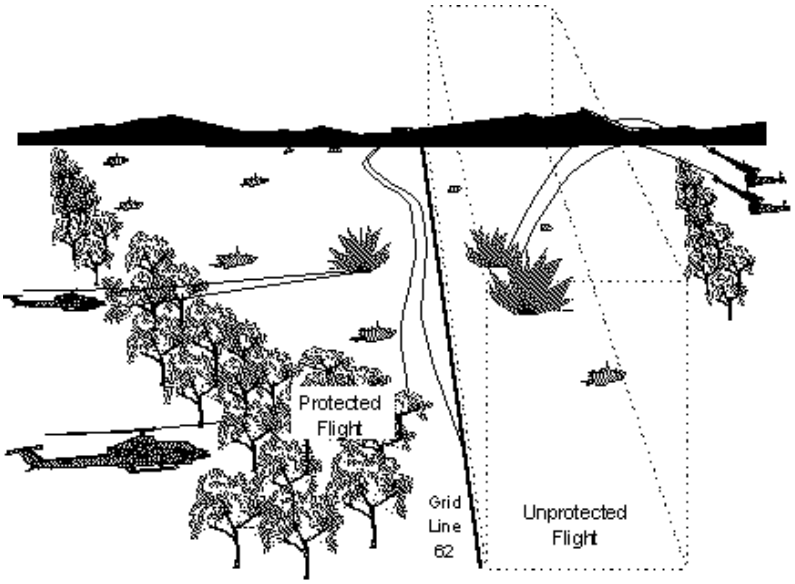

Figure 3-6. Artillery-Close Air Support Aircraft Lateral Separation.

- **Altitude and Lateral Separation.** Altitude and lateral separation is the most restrictive technique for aircrews and may be required when aircraft must cross the firing unit's gun-target line. (See figure 3-8 on page 3-38.) This is an appropriate technique when aircraft and firing units engage separate targets and the CAS target is along the gun-target line. This requires CAS aircraft to remain below indirect fire trajectories. Aircraft maneuvering requirements may also dictate that firing units deliver fires by high angle or reduced charge. For example, "Stay between north-south grid lines 58 and 62 and below 3000 feet MSL."

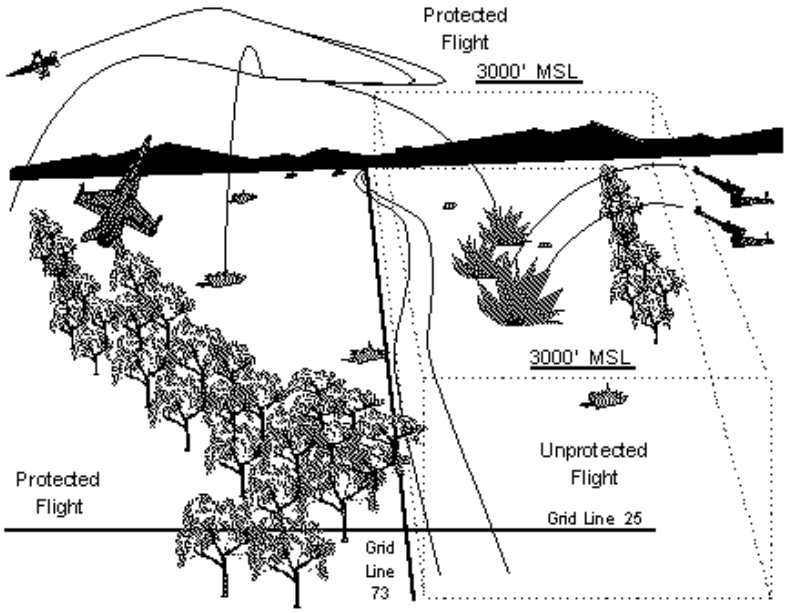

Figure 3-7. Artillery-Close Air Support Aircraft Altitude Separation.

- **Time Separation.** Time separation requires the most detailed coordination, and it may be required when aircraft must fly near indirect fire trajectories or ordnance effects. The timing of surface fires must be coordinated with aircraft routing. This ensures that even though aircraft and surface fires may occupy the same space, they do not do so at the same time. All timing for surface fires will be based on the specific aircraft event time (TOT/TTT). This technique